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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/766,749      | 01/22/2001  | Conal O'Neill        |                     | 1254             |

7590 09/03/2004

John R. Ross, III  
Ross Patent Law Office  
P.O. Box 2138  
Del Mar, CA 92014

EXAMINER

CHEN, TIANJIE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2652

DATE MAILED: 09/03/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/766,749

Applicant(s)

O'NEILL, CONAL

Examiner

Tianjie Chen

Art Unit

2652

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10,12-15 and 20-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-15,20-25,27-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2652

## ***Final Rejection (RCE)***

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 recites a "gapless microactuator;" however, the embodiments shown in drawings show gaps. For example, Fig. 2 shows a gap between 21 and 22, Fig. 5B shows a gap between 22 and 22, etc. Therefore, the meaning of "gapless" is not clearly defined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5-10, 12-15, 20-25, and 27-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Soeno et al (US 6,246,552).

With regard to claims 1-3, 8-10, 27-30, Soeno et al shows a disc drive actuation system for precisely positioning a read/write head over a selected

Art Unit: 2652

track of a rotatable disc (Figs. 5 18-19), the system including: A) a flexure (means) 31 (Fig. 18B; column 27, line 41), B) a slider (means) 2 (Column 13, line 44), C) a read/write head 1 firmly attached to the slider, D) a first drive unit (means) 5 (Fig. 32, column 1, line 55) for pivoting the flexure to position the read/write head (means) approximately over the selected track, which is a voice coil motor, E) a rectangular block microactuator 4 (Fig. 8), in which 411a-414a and 411b-414b are connected with 431 and 432 without gap, including: 1) an inner inactive region 44, 2) a first outer inactive region 431, 3) a second outer inactive region 432 4) a first piezoelectric section 411b sandwiched between the first outer inactive region and the inner inactive region, 5) a second piezoelectric section 412a sandwiched between the second outer inactive region and the inner inactive region, wherein the inner inactive region 44 is sandwiched between the first piezoelectric section 411b and second piezoelectric section 412a and firmly attached to the slider (means) and both of the outer inactive regions being firmly attached to the flexure (means) (Column 6, lines 35-37), 6) an inherent electrical circuit for energizing the first and the second piezoelectric sections to cause them to expand and contract in order to linearly move the read/write head so that the read/write head is precisely positioned (means) over the selected track (Column 22, lines 59-61), the circuit and the piezoelectric sections being configured such that the first piezoelectric section expands when the second piezoelectric section contracts and the first piezoelectric section contracts when the second piezoelectric section expands (Column 22, lines 59-66).

With regard to claim 15, Soeno et al further shows the slide is independently supported by the microactuator (Fig. 5).

Art Unit: 2652

With regard to claims 5, 12, and 20; Soeno et al further shows a flex circuit 33 (Fig. 21, column 28, line 27) for providing electrical connections to the read/write head and the microactuator.

With regard to claims 6, 13, and 21; Soeno et al further shows that the disc drive actuation system is a magnetic disc drive actuation system (Column 6, lines 24-26).

With regard to claims 7, 14, and 22 Soeno et al further shows that the disc drive actuation system is an optical disc drive actuation system (Column 6, lines 24-26).

With regard to claims 23, 24, and 25; Soeno et al further shows the first piezoelectric section includes two first piezoelectric sides, wherein both of the first piezoelectric sides are opposite to each other (Fig. 8), and wherein the second piezoelectric section includes two second piezoelectric sides (Fig. 8), wherein both of the second piezoelectric sides are opposite to each other, wherein one of the two first piezoelectric sides is rigidly attached to the first outer inactive region and wherein the other of the two first piezoelectric sides is rigidly attached to the inner inactive region, and wherein one of the two second piezoelectric sides is rigidly attached to the second outer inactive region and wherein the other of the two second piezoelectric sides is rigidly attached to the inner inactive region.

***Allowable Subject Matter***

3. Claim 26 is allowed. The following is a statement of reasons for the indication of allowable subject matter:

- As the closest reference, Soeno et al (US 6,246,552) shows a disc drive actuation system for precisely positioning a read/write head over a

Art Unit: 2652

selected track of a rotatable disc the system including: a flexure; a slider; and a microactuator, which includes: an inner inactive region, a first outer inactive region, a second outer inactive region, a first piezoelectric section, and a second piezoelectric section; wherein the first and second outer inactive regions are connected to the flexure and the inner inactive region is connected to the slider; **but fails to show** that the first and second outer inactive regions are connected to the slider and the inner inactive region is connected to the flexure.

- Applicant assumes that in his device, the microactuator has to only overcome the inertial mass of the slider and a portion of its own mass, very precise control at high frequency is possible (Specification, p. 3, lines 15-17).

### ***Response to Arguments***

4. Applicant's arguments filed 07/06/2004 have been fully considered but they are not persuasive. Reference shows that the read/write head would move linearly.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the


Art Unit: 2652

advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**TIANJIE CHEN**  
**PRIMARY EXAMINER**